



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,514	09/30/2003	Kuok San Ho	SJO920000166US2	6097
44190	7590	11/07/2005	EXAMINER	
WALTER W. DUFT LAW OFFICES OF WALTER W. DUFT 8616 MAIN ST SUITE 2 WILLIAMSVILLE, NY 14221			KIM, PAUL D	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 11/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/675,514	Applicant(s) HO ET AL.	
	Examiner Paul D. Kim	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19,20 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19,20 and 22 is/are rejected.
- 7) ☒ Claim(s) 23-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is a response to the amendment filed on 9/19/2005.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 19, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee at al. (US PAT. 6,223,420) in view of Gill (US PAT. 6,788,502).

Lee at al. teach a process of making a read head comprising steps of: forming a multi-layer wafer which includes layers that will serve as a sensing element (202) and a flux guide (208) as shown in Fig. 10; and defining a track width for the sensing element and the flux guide in a single photo processing operation as shown in Figs. 25-29 (see also col. 11, line 55 to col. 12, line 31).

As per claim 20 the sensing element is constructed as a spin valve device.

As per claim 22 Lee at al. also teach that photo processing operation includes a process of applying a photoresist mask (520) on the wafer to define the sensing element (522) and flux guide (552,554) having active regions disposed between a pair of common track width boundaries that define sensing element and flux guide track widths which are substantially equal to each other as shown in Figs. 25-29 (see also col. 11, line 55 to col. 12, line 31).

However, Lee et al. do not teach a structure of a multilayer wafer. Gill teaches a process of forming a tunnel valve sensor and flux guide having an antiferromagnetic layer (730), a ferromagnetic pinned layer (720) disposed on the antiferromagnetic layer, a barrier layer (715) disposed on the pinned layer, a sensing ferromagnetic free sub-layer (714) disposed on the barrier layer, and a cap layer (705) as shown in Fig. 7 in order to improve manufacturability yield while retaining the desired low stiffness of the free layer (see also col. 6, lines 52 to col. 8, line 29). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating a read head of Lee et al. by the structure of the multilayered wafer having free sub-layer as taught by Gill in order to improve manufacturability yield while retaining the desired low stiffness of the free layer. The completed free layer (710) is the free sub-layer (714) plus an additional free layer (712) as shown in Fig. 7.

Allowable Subject Matter

3. Claims 23-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if claim 24 is a dependent claim of claim 23.

Response to Arguments

4. Applicant's arguments with respect to claims 19, 20 and 22-26 have been considered but are moot in view of the new ground of rejection.

5. Applicant argues that the prior art of record fails to disclose the claimed invention such as a free sub layer having a thickness is less than a completed free layer on the barrier layer. The completed free layer (710) of Gill is the free sub-layer (714) plus an additional free layer (712) as shown in Fig. 7.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Friday between 7:00 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pdk



A. DEXTER TUGBANG
PRIMARY EXAMINER